

Resource Summary Report

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NIH MRI Study of Normal Brain Development

RRID:SCR_003394

Type: Tool

Proper Citation

NIH MRI Study of Normal Brain Development (RRID:SCR_003394)

Resource Information

URL: <http://www.pediatricmri.nih.gov/>

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Description: Data sets of clinical / behavioral and image data are available for download by qualified researchers from a seven year, multi-site, longitudinal study using magnetic resonance technologies to study brain maturation in healthy, typically-developing infants, children, and adolescents and to correlate brain development with cognitive and behavioral development. The information obtained in this study is expected to provide essential data for understanding the course of normal brain development as a basis for understanding atypical brain development associated with a variety of developmental, neurological, and neuropsychiatric disorders affecting children and adults. This study enrolled over 500 children, ranging from infancy to young adulthood. The goal was to study each participant at least three times over the course of the project at one of six Pediatric Centers across the United States. Brain MR and clinical/behavioral data have been compiled and analyzed at a Data Coordinating Center and Clinical Coordinating Center. Additionally, MR spectroscopy and DTI data are being analyzed. The study was organized around two objectives corresponding to two age ranges at the time of enrollment, each with its own protocols. * Objective 1 enrolled children ages 4 years, 6 months through 18 years (total N = 433). This sample was recruited across the six Pediatric Study Centers using community based sampling to reflect the demographics of the United States in terms of income, race, and ethnicity. The subjects were studied with both imaging and clinical/behavioral measures at two year intervals for three time points. * Objective 2 enrolled newborns, infants, toddlers, and preschoolers from birth through 4 years, 5 months, who were studied three or more times at two Pediatric Study Centers at intervals ranging from three months for the youngest subjects to one year as the children approach the Objective 1 age range. Both imaging and clinical/behavioral measures were collected at each time point. Participant recruitment used community based sampling that included hospital venues (e.g., maternity wards and nurseries, satellite physician offices, and well-child clinics), community organizations (e.g., day-care centers, schools, and churches), and siblings of children participating in other research at the Pediatric Study Centers. At timepoint 1, of those enrolled, 114 children had T1 scans that passed quality

control checks. Staged data release plan: The first data release included structural MR images and clinical/behavioral data from the first assessments, Visit 1, for Objective 1. A second data release included structural MRI and clinical/behavioral data from the second visit for Objective 1. A third data release included structural MRI data for both Objective 1 and 2 and all time points, as well as preliminary spectroscopy data. A fourth data release added cortical thickness, gyrification and cortical surface data. Yet to be released are longitudinally registered anatomic MRI data and diffusion tensor data. A collaborative effort among the participating centers and NIH resulted in age-appropriate MR protocols and clinical/behavioral batteries of instruments. A summary of this protocol is available as a Protocol release document. Details of the project, such as study design, rationale, recruitment, instrument battery, MRI acquisition details, and quality controls can be found in the study protocol. Also available are the MRI procedure manual and Clinical/Behavioral procedure manuals for Objective 1 and Objective 2.

Abbreviations: Pediatric MRI Study

Synonyms: NIH Pediatric MRI Data Repository, Pediatric MRI Data Repository

Resource Type: experimental protocol, narrative resource, data or information resource, data set

Keywords: young human, child, pediatric, experimental protocol, brain, brain development, development, mri, minc, clinical, behavior, anatomical mri, diffusion tensor imaging, mr spectroscopy, adolescent, clinical data, behavioral data, data visualization software, clinical measure, behavioral measure, physical neurological examination, behavioral rating, neuropsychological testing, structured psychiatric interview, hormonal measure, image collection, neonate, clinical neuroinformatics, dicom, minc2, magnetic resonance, nifti

Related Condition: Healthy, Normal

Funding: NICHD ;
NIDA ;
NIMH ;
NINDS ;
NIH Blueprint for Neuroscience Research

Availability: THIS RESOURCE IS NO LONGER IN SERVICE

Resource Name: NIH MRI Study of Normal Brain Development

Resource ID: SCR_003394

Alternate IDs: nif-0000-00201

Old URLs: <http://www.bic.mni.mcgill.ca/nihpd/info/>,
<https://nihpd.crbs.ucsd.edu/nihpd/info/index.html>

Record Creation Time: 20220129T080218+0000

Record Last Update: 20260801T042532+0000

No rating or validation information has been found for NIH MRI Study of Normal Brain Development.

No alerts have been found for NIH MRI Study of Normal Brain Development.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 6 mentions in open access literature.

Listed below are recent publications. The full list is available at [T1D](#) .

Torre GA, et al. (2020) The relationship between brain structure and proficiency in reading and mathematics in children, adolescents, and emerging adults. Developmental cognitive neuroscience, 45, 100856.

Torre GA, et al. (2019) Relationships between gray matter volume and reading ability in typically developing children, adolescents, and young adults. Developmental cognitive neuroscience, 36, 100636.

Walker L, et al. (2016) The diffusion tensor imaging (DTI) component of the NIH MRI study of normal brain development (PedsDTI). NeuroImage, 124(Pt B), 1125.

Cao B, et al. (2015) Development and validation of a brain maturation index using longitudinal neuroanatomical scans. NeuroImage, 117, 311.

Wang Y, et al. (2014) Knowledge-guided robust MRI brain extraction for diverse large-scale neuroimaging studies on humans and non-human primates. PloS one, 9(1), e77810.

Mills KL, et al. (2014) Methods and considerations for longitudinal structural brain imaging analysis across development. Developmental cognitive neuroscience, 9, 172.